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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

FERRIS, DERRICK W

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/801,533

Applicant(s)

MEKKITTIKUL ET AL.

Examiner

Derrick W. Ferris

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-82 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-55, 57-64, and 66-82 is/are rejected.
- 7) ☒ Claim(s) 56 and 65 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/24/2005 has been entered.

Response to Arguments

2. This Office action is in response to applicant's paper filed 10/24/2005. **Claims 26-82** as amended are still in consideration for this application. Applicant has canceled claims 1-25. Applicant has added claims 26-82.

3. Examiner **withdraws** the anticipated rejection to *Kalman* and corresponding obviousness rejections. In particular, applicant canceled the claims rendering the rejection moot. However, please note the new rejection(s) below for the newly added claims.

Drawings

4. The drawings are objected to because figure 9 does not clearly show the recited claimed subject matter since the drawings boxes have a dark background thus obstructing some of the reference characters shown in the diagram. *Thus please remove the background for each box.* Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be

Art Unit: 2663

labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. **Claims 26-48, 50, 52-55, 57, 61-64 and 66** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In particular, **claim 26** at line 8-9 recites the following “a classifier circuit connected to said input *and configured to assign a flow identifier to each packet* and to output a classified flow”. The italicized portion of the above claim is not supported in applicant’s specification. In particular, the description with respect to figure 9 on page 16 of applicant’s description does not further describe the above limitation at issue. **Claim**

Art Unit: 2663

27, line 2 further recites that the classifier circuit is configured to classify *each packet* into a flow *according to a priority or a QoS attribute*. The italicized portion of the above claim is not supported in applicant's specification. In particular, the description with respect to the classifier circuit does not explicitly teach how the packets are classified, see applicant's specification at bottom of page 16. Applicant's specification at page 12, first full paragraph makes reference to handling packets based on the type of traffic (i.e., mission critical applications versus best-effort applications) but does not further teach a classifier circuit that classifies each packet according to a QoS attribute. Furthermore, applicant's specification at page 16, lines 16-17 state that *each flow* is classified and not each packet for each flow. **Claim 29**, line 6 further recites queuing a flow destined to said first ring and having a second priority *until a predetermined condition is satisfied* and then redirecting said flow having a second priority to said second ring, and queuing a flow destined to said first ring and having a third priority *until said ring segment status message changes a second time* and then allowing said flow having a third priority to flow to said first ring. The italicized portion of the above claim is not supported in applicant's specification. In particular, the description with respect to the controllable switch does not further teach a predetermined condition, see e.g., applicant's specification at page 17. Furthermore, with respect to priority, applicant does not teach a predetermined condition, see e.g., applicant's specification at page 12. In particular, applicant's specification does not teach each queuing packets until a second status message changes a second time. In particular, page 17, second full paragraph teaches a flow restoration scheme which may or may not be based on priority. The above restoration scheme further teaches reverting back to the original ring when the failure is corrected. Thus the above scheme teaches away from queuing a flow destined for said first ring until a status changes

Art Unit: 2663

a second time. **Claim 37** recites wherein *said packets* are at least one of constant bit rate (CBR), unspecified bit rate (UBR), real-time variable bit rate (rt-VBR), and Control (CP) packets. The italicized portion of the above claim is not supported in applicant's specification. In particular, the figure 9 shows that the packets *on the ring* may be one of the following above types. Figure 9 does not show that the packets *from the source device* may be one of the following above types (i.e., the packets that are inputted into the classifier 920). Page 12, lines 7-20 do not further teach the above types. **Claims 27-38** are rejected for also depending on rejected claim 26. **Claim 39** is rejected based on similar reasoning for claim 26. **Claim 40** is rejected based on similar reasoning for claim 27. **Claim 42** is rejected based on similar reasoning for claim 29. **Claim 47** is rejected based on similar reasoning for claim 37. **Claims 39-48** are rejected for also depending on rejected claim 26. **Claim 50** is rejected based on similar reasoning for claim 27 where the attribute is the QoS parameter. **Claim 52** is rejected based on similar reasoning for claim 29. **Claims 53-55** are rejected for depending on claim 52. **Claim 57** is rejected based on similar reasoning for claim 37. **Claim 61** is rejected based on similar reasoning for claim 29. **Claims 62-64** are rejected for depending on claim 61. **Claim 66** is rejected based on similar reasoning for claim 37.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. **Claim 45** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, claim 56, lines 4-5 recites said first and second ring data removal

Art Unit: 2663

circuits which lacks proper antecedent basis. Please amend the claim to recite said first and second data removal *devices*.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

10. **Claims 26-28, 38-40, 41, 48-50, 51, 56, 58-60 and 65** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No 6,714,517 B1 to *Fawaz et al.* (“*Fawaz*”).

As to **claim 26**, see e.g., figure 6 for a flow control device. An input configured to accept and relay packets from said source device is taught e.g., as input buffer 302. A classifier circuit connected to said input and configured to assign a flow identifier to each packet and to output a classified flow is taught as classifier 304. A first buffer connect to said classifier circuit and configured to buffer said classified flow, said first buffer having a rate controller which various an output of said first buffer on a per-flow basis is taught

e.g., as FIFO buffers 306-310. In particular, please note that DRR teaches a rate controller. Also further note that each SLA is a flow. A first and second ring buffer connected to a respective one of said first and second rings is taught e.g., as output buffers 317 such that one output is in one direction and another out is in another direction. A controller switch connecting said output of said first buffer to said first ring buffers, second controllable switch controlled in response to a ring segment status so as to cause traffic, on a per-flow basis, to be queued in said first buffer and/or related to one of said of said first and second ring buffers is taught e.g., as scheduler 316. In particular, scheduler 316 operates based on congestion of the network where one embodiment relates to a bi-directional ringed network. As such, a reasonable but broad interpretation of controlled in response to a ring status message is taught in view of applicant's specification.

As to **claim 27**, the packets are classified based on type of application such that a reasonable but broad interpretation of priority is taught by the reference, see e.g., column 7, lines 54-55.

As to **claim 28**, *Fawaz* teaches at least congestion control, see e.g., column 11, lines 10-55. In particular, a QoS node sends a STOP message to at least the upstream node such that the STOP message is apart of the ring segment status.

As to **claim 38**, *Fawaz* teaches a network as shown e.g., in figure 4 which has nodes.

As to **claim 39**, see similar rejection to claim 26.

As to **claim 40**, see similar rejection to claim 27.

Art Unit: 2663

As to **claim 41**, see similar rejection to claim 28.

As to **claim 48**, see similar rejection to claim 38.

As to **claim 49**, see similar rejection to claim 26.

As to **claim 50**, see similar rejection to claim 27.

As to **claim 51**, see similar rejection to claim 28.

As to **claim 56**, see the output buffers with respect to the classifier as mentioned in the rejection for claim 26. See e.g., column 10, lines 10-26 with respect to discarding packets for a flow.

As to **claim 58**, see similar rejection to claim 26.

As to **claim 59**, see similar rejection to claim 27.

As to **claim 60**, see similar rejection to claim 28.

As to **claim 65**, see similar rejection to claim 56.

11. **Claims 67, 68, 70, 71, 73, 75, 76, 78, 79, and 81** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application 2002/0118700 A1 to *Bruckman et al.* ("*Bruckman*").

As to **claim 67**, *Bruckman* teaches a method of routing data flows. In particular, *Bruckman* teaches a dispatcher which determines which of the rings to allocate resources, see e.g., paragraph 0052 on page 4 and step 40 in e.g., figure 3. Specifically, a flow is given a reasonable but broad interpretation of a request from a requesting node, see e.g., paragraph 0006 on page 1. Thus *Bruckman* teaches controllably assigning the packets, on a per-flow basis and in response to a ring segment status. In particular, the ring segment status could be the availability of each ring, see e.g., paragraph 0009 on page 1.

Art Unit: 2663

Based on the above decision the packets for the flow are routed on either the first or second ring, see e.g., step 40 in figure 3.

As to **claim 68**, see e.g., step 38 and paragraph 0059 on page 4 where the dispatcher refuses the request. As such the packets are dropped, i.e., controllably removing the packets from one of the first and second rings on a per-flow basis.

As to **claim 70**, see similar rejection to claim 67.

As to **claim 71**, see similar rejection to claim 68.

As to **claim 73**, see similar combined rejections to claims 67 and 68.

As to **claim 75**, see similar rejection to claim 67.

As to **claim 76**, see similar rejection to claim 68.

As to **claim 78**, see similar rejection to claim 67.

As to **claim 79**, see similar rejection to claim 68.

As to **claim 81**, see similar combined rejections to claims 67 and 68.

12. **Claims 75-82** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,785,291 B1 to *Cao et al.* (“*Cao*”).

As to **claim 75**, *Cao* teaches dynamic assignment of channels for packet flows, see e.g., column 2, lines 31-52. As such, the channel status can be the channel specification, e.g., step 52. Hence step 54 teaches controllable assigning the packets on a per-flow basis and in response to a channel status, to the first channel for an initial entry of said packets onto the first and second channels.

Art Unit: 2663

As to **claim 76**, see e.g., step 58 of figure 4, when the flow terminates the resources are de-allocated. Thus the packets are controllably removed from one of the first and second channels on a per-flow basis.

As to **claim 77**, see e.g., step 66 with respect to re-assigning packet flows to new channels.

As to **claim 78**, see similar rejection to claim 75.

As to **claim 79**, see similar rejection to claim 76.

As to **claim 80**, see similar rejection to claim 77.

As to **claim 81**, see similar combined rejections to claims 75 and 76.

As to **claim 82**, see similar rejection to claim 77.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. **Claims 37, 47, 57 and 66** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No 6,714,517 B1 to *Fawaz et al.* ("*Fawaz*") in view of U.S. Patent No. 6,014,384 to *Weberhofer*.

As such to **claim 37**, *Fawaz* discloses limitation in the base claim.

Fawaz is silent or deficient to the further limitation wherein said packets are of a certain type (i.e., CBR, UBR, rt-VBR, and CP).

Weberhofer teaches the further recited limitation above at e.g., column 4, lines 14-52. In particular, the above types of traffic are well known in the art.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Fawaz* by clarifying different types of ATM traffic.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to separate cells of higher and lower priority. In particular, *Weberhofer* cures the above-cited deficiency by providing a motivation found at e.g., column 4, lines 47-51.

As to **claim 47**, see similar rejection to claim 37.

As to **claim 57**, see similar rejection to claim 37.

As to **claim 66**, see similar rejection to claim 37.

15. **Claims 67-74** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,785,291 B1 to *Cao et al.* ("*Cao*") in view of "Evolution of Optical Transport Technologies: From SONET/SDH to WDM" to *Cavendish*.

As such to **claim 67**, *Cao* teaches dynamic assignment of channels for packet flows, see e.g., column 2, lines 31-52. As such, the channel status can be the channel specification, e.g., step 52. Hence step 54 teaches controllable assigning the packets on a per-flow basis and in response to a channel status, to the first channel for an initial entry of said packets onto the first and second channels.

Cao is silent or deficient to the further limitation of first and second rings. In particular, *Cao* teaches channels in view of applicant's specification at 18, lines 5-15 but does not explicitly teach a first and second ring.

Cavendish teaches the further recited limitation above at e.g., left-hand column on page 166 with respect to a BLSR network in view of figure 1 of *Cavendish*.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Cao* by clarifying that first and second channels are actually first and second rings on a BLSR network.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to transmit packets over a different medium and in particular an optical medium such as SONET. In particular, *Cao* cures the above-cited deficiency by providing the above motivation found at e.g., 6, lines 38-46.

As to **claim 68**, see similar reasoning above for claim 67 where *Cao* teaches e.g., step 58 of figure 4, when the flow terminates the resources are de-allocated. Thus the packets are controllably removed from one of the first and second channels on a per-flow basis.

As to **claim 69**, see similar reasoning above for claim 67 where *Cao* teaches e.g., step 66 with respect to re-assigning packet flows to new channels.

As to **claim 70**, see similar rejection to claim 67.

As to **claim 71**, see similar rejection to claim 68.

Art Unit: 2663

As to **claim 72**, see similar rejection to claim 69.

As to **claim 73**, see similar combined rejections to claims 67 and 68.

As to **claim 74**, see similar rejection to claim 69.

Allowable Subject Matter

16. **Claims 29-36, 42-46, 52-55, and 61-64** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

17. **Claim 56 and 65** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123.

The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

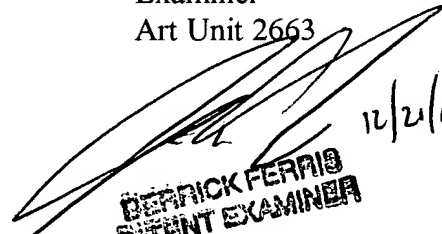
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2663

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


DWF

Derrick W. Ferris
Examiner
Art Unit 2663


12/2/05
DERRICK FERRIS
PATENT EXAMINER